GOOD SOIL MANAGEMENT *is Essential* FOR HIGH WARTIME PRODUCTION

Circular 535
University of Illinois · College of Agriculture
Extension Service in Agriculture and Home Economics

EVERY ILLINOIS FARM IS A WARTIME factory. Instead of manufacturing guns, tanks, and planes, these factories are producing another wartime necessity—food. The need is so great that every acre must turn out crops and livestock at top efficiency. This calls for good soil management and all-round good farming.

Agriculture can meet the wartime food-production goals for the next five years only thru a good soil-management program which will build up and conserve fertility. Don't lose a year; this fall is the time to start building for higher production next year.

CLOVER THE KEY CROP

Production of all essential crops on these wartime farm factories will depend on the amount of clovers and alfalfa grown. These crops supply feed for livestock and fertility for crops and control erosion.

Clovers needed to produce meat and milk

A lack of good clover or alfalfa hay and pasture is the bottleneck in the production of meat and milk on many farms. These crops produce an abundance

Good hogs and good alfalfa go together. Alfalfa pasture produces healthy fast-growing hogs at low cost.

of cheap home-grown feed high in protein and minerals, thus reducing the amount of protein and mineral supplements that needs to be bought. Feeding livestock on good pastures moreover helps to solve the farm labor problem because the livestock harvest the crop and feed themselves. Clover and alfalfa also offer good drouth insurance by producing feed when other crops fail.

Where the sweet-clover weevil is prevalent, sweet clover had best be sown only in a mixture or other clovers should be grown.

Plan now for plenty of clover and alfalfa hay. With livestock numbers at an all-time high, this is no time to be caught short on feed.

Clovers supply fertilizer, control erosion

Clover is the farmer's fertilizer factory. It as well as other legumes takes nitrogen, the most important fertilizer for Illinois soils, from the free supply in the air and adds it to the soil. Because of a lack of nitrogen several million acres of farm land on which clovers have not been grown are producing at only 50 percent of capacity.

A thick cover of good clover protects rolling land against erosion. It also adds organic matter to the soil, which will reduce erosion when corn and soybeans are planted on the land.

Make bluegrass pastures produce more

Grass requires fertility the same as corn does. The soils of most bluegrass pastures are low in fertility; poor soils mean poor pasture, and poor pasture means poor livestock. Many bluegrass pastures on worn-out land, which are now producing little food and little income for the farmer, can be made to double their production by liming, disking, seeding clovers, and following good management practices. More feed is only part of the benefit—grass from treated pastures has a higher feed value since it contains more proteins and minerals than grass from untreated pastures.

Feed the soil; the soil will feed the grass; and the grass will feed the livestock.

Which kind of pasture will your cows have?

Lime needed to insure good clover

On acid land clover and alfalfa fail or at best produce only half a crop. A simple soil test will tell whether your soil is acid and how much limestone is needed. Cropland and pasture land where clover is

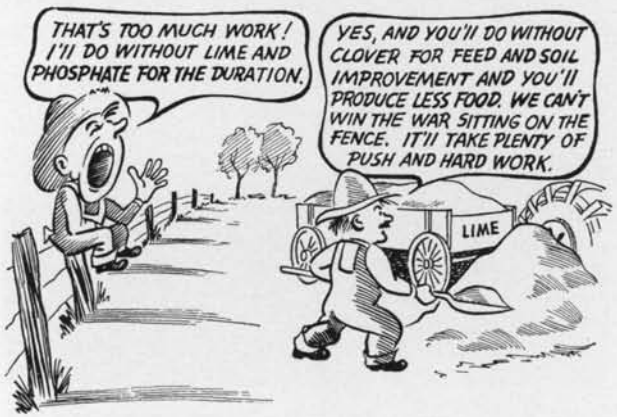
to be seeded should be tested *now* and limestone applied *this fall.*

On many soils lime is all that is needed to get a good growth of clover. Other soils may need phosphate in addition to lime, especially for red clover and alfalfa. If the field to be seeded has already been limed, test for phosphorus and apply phosphate *this fall or winter.*

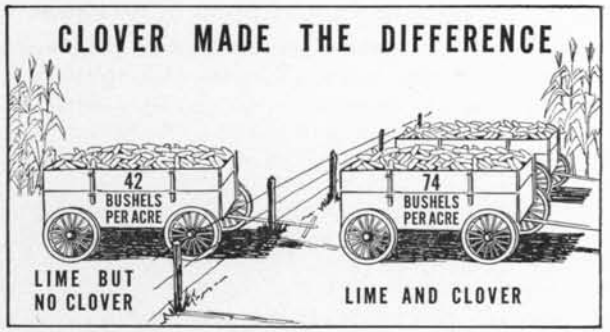
Be sure to test. This is no time to guess at what your soil needs.

Order lime and phosphate early

Because of heavy wartime demands on railroads, farmers will need to order their limestone and phosphate early and take delivery whenever railroad cars are available. Many farmers will have to pile their



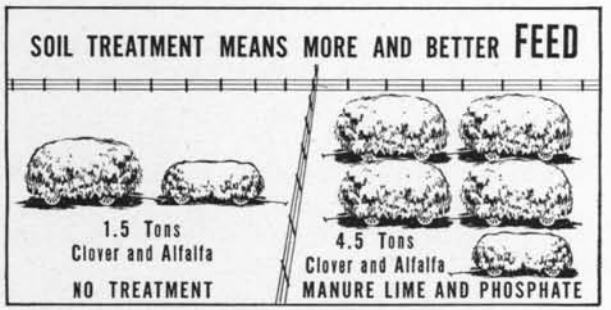
Too little and too late can lose the war on the farm front.



Sweet clover, a cheap home-grown nitrogen fertilizer, increased the yield of corn 32 bushels an acre on the Carlinville soil experiment field (4-year average).

limestone in the field and store their phosphate in a barn or shed until the field is ready.

Because fewer commercial trucks will be available for hauling and spreading, many farmers will have to spread their own limestone and phosphate. A



One treated acre of clover and alfalfa produced as much feed as three untreated acres. The clover-alfalfa on the treated land will also add three times as much fertility to the soil.

shortage of labor and spreaders calls for cooperation in trading both.

CONTROL EROSION

The need for high wartime production is no excuse for ruining the land. We must save our soil for food production now and after the war. Wasting fertility thru erosion will mean lower yields for years to come.

On rolling land corn and soybeans, two major crops in the wartime production program, permit more erosion than most other common farm crops. Most of the corn and soybeans should therefore be grown on the more level land. On moderate slopes these crops can be grown with little soil or water loss if erosion-control practices are followed.

Include clovers and small grain in rotation

Even on slight slopes erosion losses from corn and soybeans may be serious unless they are rotated with small grains and clover. As the slope increases, more small grains and clovers should be grown.

Winter grain crops, such as wheat, rye, and winter barley (for southern Illinois), provide a cover for rolling land during fall, winter, and spring, when there is considerable erosion. These crops also furnish late fall and early spring pasture.

Plant corn and soybeans on the contour

Planting corn and soybeans on the contour (across rather than up and down the slope) conserves soil and water and increases yields. Each contour row serves as a small dam or terrace which holds back the

Soil sabotage like this helps the Axis. One heavy spring rain carried away tons of topsoil from this field where corn was planted up and down the slope.

water, allowing most of it to soak into the ground and the excess to flow off slowly down grass waterways. Even better protection is given when terraces are used in connection with contour farming. Such a practice not only protects the soil but has been found to increase corn and soybean yields 3 to 12 bushels an acre.

Contour-farming is an important practice that any farmer can easily follow.

Soybean stubble ground is loose and erodes easily, even tho the beans were planted on the contour. Erosion after the crop is harvested can be greatly reduced by leaving the bean straw on the land and seeding rye, winter barley, or even oats directly behind the cutter bar of the combine. Such a cover crop can also supply pasture if needed.

Use rough land for pasture

Don't plow up the steeper slopes for corn and soybeans. The most profitable and practical use of such land is for pasture or hay.

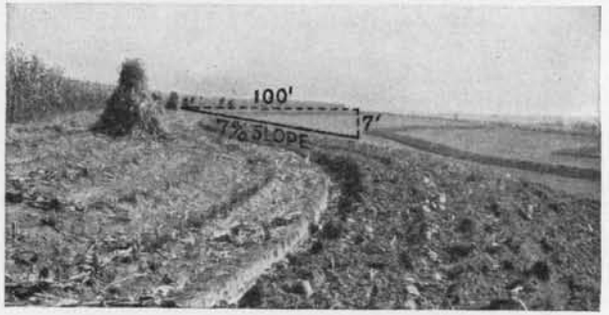
Good use is being made of this rough land. Such a pasture, if well managed, holds and improves the soil and produces some of the most economical feed on the farm. The woodland should be fenced to protect it from livestock.

A heavy growth of grass and clover controls erosion and supplies high-quality feed for livestock at low cost. Thin weedy pastures on worn-out land, however, do not protect the soil from erosion nor do they furnish much feed for livestock. If such land is to produce its share of food, its fertility has to be built up thru soil treatment and clovers.

Build up fertility

The backbone of an erosion-control program is the building up of the fertility of the soil. Such a program includes using lime and phosphate where needed, growing clovers, and returning manure, straw, and cornstalks to the land.

In controlling erosion soil improvement has a double-barreled effect. The heavier growth that follows soil treatment provides a better soil cover and hence better protection against erosion. Also the addition of organic matter mellows the soil so that it can soak up more water.



Contour farming, soil treatment, and a good rotation have controlled erosion and increased yields on this 7-percent slope (a slope with a fall of 7 feet in 100).

It is easier to leave grass waterways than to jump gullies.

Prevent gullies with grass waterways

Grass waterways serve as gutters which carry excess drainage water away from the sloping roofs of the fields and thus prevent heavy rains from digging gullies. A simple and practical way to prevent gullies is to seed the draws to grass. If the field is in sod, it is easier to leave a wide strip of grass in the draws when plowing.

Don't fall-plow rolling land

Fall-plowing rolling land results in serious soil losses. This is especially true on land with a tight subsoil. Where fall-plowing is necessary, plow on the contour and seed a small-grain cover crop, such as rye or oats in early fall for protection against heavy fall and spring rains. If the field is in sod, leave draws unplowed for grass waterways.

Where erosion is not likely to be serious, clean plowing in the fall for corn helps to prevent damage by cutworms, grape colaspis, webworms, rootworms, wireworms, white grubs, and the European corn borer now established in the corn-growing areas of Illinois.

More detailed information on soil management will be found in the following Illinois publications:

Five Steps in Pasture Improvement (mimeo.)
Test Your Soil for Acidity. C-346
Testing Soil for Available Phosphorus. C-421
Limestone the Key to Soil Conservation (mimeo.)
Grass or Gullies (mimeo.)
Contour Farming and Terracing. C-513

Address, COLLEGE OF AGRICULTURE, UNIVERSITY OF ILLINOIS, URBANA, for the publications you need.

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